12 LEAD ELECTROCARDIOGRAPHY

PURPOSE

To identify guidelines for the acquisition, interpretation and transmission of a 12 lead ECG in the prehospital setting to facilitate early identification STEMI patients and prompt transportation to a STEMI Receiving Center (SRC).

NOTE: 12 lead ECG training and competency is mandatory in the ICEMA region for all ALS providers.

POLICY

Paramedics will obtain a 12 lead ECG in patients suspected of having acute coronary syndrome and provide treatment in accordance with this policy.

INDICATIONS

Any and all patients whose medical history and/or presenting complaints are consistent with an acute coronary syndrome. Patients will have one or more of the following:

1. Chest or upper abdominal discomfort suggestive of acute coronary syndrome.
2. New onset cardiac dysrhythmias (including adult cardiac arrest if return of spontaneous circulation).
3. Unexplained syncope or near syncope.
4. Unexplained acute generalized weakness with or without diaphoresis.
5. Acute onset of dyspnea suggestive of congestive heart failure.
6. Other signs or symptoms suggestive of acute coronary syndrome.
7. May be considered in patients with stable tachycardia for diagnostic purposes.
8. Any atypical presentation of symptoms that may be a suspected anginal equivalent.

CONTRAINDICATIONS (RELATIVE)

1. Trauma

2. Uncooperative patient

3. Presence of unstable ventricular tachycardia, ventricular fibrillation, or 3rd degree AV block.

PROCEDURE

1. Complete initial assessment and stabilizing treatment

2. Recommend obtaining the ECG as soon as possible and prior to departing the scene.

3. Place precordial lead electrodes and acquire tracing as per manufacturer's directions.

4. Relay ECG interpretation to STEMI Base Station. Assure that the receiving hospital is advised if machine interpretation is "acute myocardial infarction" or "suspected acute myocardial infarction." Meets STEMI criteria.

5. STEMI Base Station contact must be made in situations where the medic suspects a positive STEMI which is not supported by the ECG interpretation.

6. If defibrillation or synchronized cardioversion are necessary, place paddles or defibrillation electrodes, removing precordial leads if necessary.

7. The paramedic should transmit ECG to the STEMI Receiving Center when available.

DOCUMENTATION

1. Document the performance of 12 lead ECG, the machine interpretation and the paramedic interpretation on pre-hospital care report (PCR).

2. Provide original tracing to receiving hospital. Attach copy of 12 lead to hospital copy, provider copy and EMS copy of PCR.

DATA COLLECTION

In order to continue STEMI quality improvement, the following data elements must be collected on each and every 12 lead ECG performed and provided to the receiving hospital with the patient:

1. A copy of the ePCR or O1A.
    a. Patient identifiers
    b. Procedure performed (12 lead ECG)
    c. Machine, paramedic, and physician interpretations
    d. Additional ECG findings
    e. Rhythm
2. A copy of the 12 lead ECG.
    a. Patient identifiers
    b. Date 12 lead ECG performed
    c. Time 12 lead ECG performed

SPECIAL CONSIDERATIONS

1. Approximate time to acquire 12 lead should be no longer than three (3) minutes.
2. Perform 12 lead ECG prior to or just as Nitroglycerin is administered as changes in the 12 lead ECG may occur with treatment.
3. 12 lead ECG does not need to be repeated, if originally performed at clinics or other similar settings unless patient's condition changes.
4. Machine interpretation of suspected STEMI may not be accurate in presence of paced rhythms, bundle branch blocks, and certain tachydysrhythmias (e.g., SVT, atrial flutter) or wandering base line. When communicating machine interpretation to base hospital, paramedics should advise base of paced / BBB / tachydysrhythmia rhythms.